Register of Australian Herbage Plant Cultivars

A. Grasses
8. Setaria
Setaria sphacelata (Schum) Stapf ex Massey (setaria) cv. Splenda

Reg. No. A-8a-4
Registered December 1982

Published in the Journal of the Australian Institute of Agricultural Science 49 (4): 235-6. 1983.

Origin

Bred by J. B. Hacker, Division of Tropical Crops and Pastures, CSIRO, Brisbane, Qld., from crosses between the tetraploid *Setaria spacelata* var. *splendida*, CPI 15899 (peviously *S. splenda* (1)) and two tetraploid accessions of *S. shacelata* var. *sericea* CPI 19915 and CPI 16067 (previously *S. anceps* (1)). Two cycles of selection were carries out for seed production and conformity to the var. *splendida* phenotype. Final selections were subjected to two generations of seed production to improve the stability of the population.

Recommended for registration by the Queensland Herbage Plant Liaison Committee in 1981. Breeders' seed maintained by the Division of Tropical Cops and Pastures, CSIRO. Registered December 1982.

Morphological description

A robust perennial up to 2.8m tall at flowering. Leaves broad, on vegetative plants maximum width approximately 15mm, rarely up to 21 mm wide, glabrous, predominantly cauline on flowering culms. Leaf sheaths glabrous or slightly hairy. Culms robust, commonly with 10-11 nodes (rarely up to 16) at flowering. Basal internodes 8-9, occasionally up tp 13mm wide. Chromosome number 2n =4x = 36.

Distinguished from cvv. Nandi and Narok by its taller growth, predominantly cauline rather than basal leaves and much later flowering (50% flowering approximately 29 days later than Narok; 34 days later than Nandi). Distinguished from Kazungula by its wider vegetative leaves (maximum up to 15mm compared with 11mm for Kazungula), more erect vegetative growth in winter, later flowering (by 15 days), and to a lesser extent by greater culm node number and height.

Agronomic characters (2,3,4)

Splenda is a vigorous perennial which combines many of the better agronomic characters of the botanical varieties *sericea* (seed production) and *splendida* (late flowering and leafiness) (2,3). In contrast to var. *splendida* it is fertile and yields up to 80 kg/ha cleaned seed have been obtained. The late flowering characteristic should allow continued grazing of leaf and immature stem when other varieties have gone to seed. At South Johnstone, dry matter yield is equivalent to that of Guinea grass but less than that of var. *splendida* (4). In the same study it was shown to combine better with legumes than var. *splendida*; the satisfactory combination with legumes is in agreement with cutting trials in southern Queensland (Hacker, unpubl. data).

The cultivar is well adapted to wet tropical situations but should also be of value in other tropical and subtropical regions with a rainfall exceeding 750mm.

Oxalate concentration in young leaf is comparable with that in Kazungula. In a single summer harvest the two cultivars contained 4.7 (91% soluble) and 4.8% (85% soluble) respectively, of oxalate expressed as percentage anhydrous oxalic acid in the dry matter. In the same experiment sodium and potassium concentrations were 0.74 and 4.47% respectively; in common with the parents, cv. Splenda is a sodium accumulator (3). Because of the high concentration of oxalate, cv. Splenda is not suitable for horses.

References

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4. Middleton, C.H., and Abbott, R.A. (1981)). Personal communication. Qld. Dep. Prim. Ind., South Johnstone.